

Introduction

As a part of Army Medical Command's (MEDCOM) ongoing effort to increase mission readiness through sustainability, Winn Army Community Hospital (ACH) at Fort Stewart, Georgia has developed and implemented a sustainability action plan in alignment with the MEDCOM Sustainability Strategy, Executive Order (EO) 13514, the DoD Strategic Sustainability Performance Plan, and the Army Sustainability Campaign Plan. The goal of Winn ACH is to become the "greenest" medical treatment facility (MTF) within MEDCOM.

In April 2010, the Winn ACH Sustainability team was established at a workshop through support from HQ MEDCOM. During the workshop, the newly-formed sustainability team developed their draft Sustainability Action Plan for their MTF, including metric-driven goals, targets, and initiatives. Based on information taken from the MEDCOM baselining sustainability data, Winn ACH was able to see where they stood in sustainability against other MTFs and then set goals that were appropriate to their mission while also supporting the goals of the MEDCOM Sustainability Strategy.

Since then great strides have been made towards all the sustainability team's goals, but Winn ACH has made especially large improvements in energy conservation, waste reduction through recycling, and the elimination of polystyrene clamshell containers from the cafeteria. To reduce energy consumption, Winn ACH has installed solar modules on the roof of their facility and installed motion sensor units in 80% of the light fixtures within the facility. Winn ACH also meters the electricity consumption of the entire facility and has a fully operational generator to produce electricity during peak hours, reducing overall installation electricity demand. Winn ACH tracks their solid waste and recycling by weight to measure the effectiveness of the recycling program, supporting waste diversion from landfills. In FY2010, Winn ACH demonstrated a 75.7% increase in the volume of recycling over the previous year. The Nutrition Care department has worked with their prime vendor to replace all polystyrene foam clamshells with corn-based containers, which are biodegradable and compostable.

The sustainability program at Winn ACH is ongoing and evolving, and data is continually tracked to document the positive impact of implemented sustainability initiatives. As the program grows and existing goals are met, updates are made to the Sustainability Action Plan developed during the initial sustainability workshop. Success of the program is measured against the baseline MTF data gathered by MEDCOM. Winn ACH has made substantial progress towards their original goals in only a year's time. Their efforts to integrate sustainability into Winn ACH operations are supportive of both MEDCOM and general Army mission readiness.

Methods

The Winn ACH Sustainability team was established in April 2009 to develop and implement the Winn ACH Sustainability Strategy, in support of the overarching HQ MEDCOM Sustainability Strategy and EO 13514. The Winn ACH Sustainability team's purpose is to support Winn ACH by helping the facility to maintain mission readiness, improve quality of life for patients and healthcare staff, strengthen relationships with the community, and reduce the total cost of operation ownership. During the sustainability workshop, the Winn ACH Sustainability team developed sustainability goals, targets, and

initiatives tailored to their MTF that support the mission of Winn ACH as well as the MEDCOM Sustainability Strategy. The Winn ACH Sustainability team is the front line for sustainability at Winn ACH. The Winn Sustainability Team includes members from all departments, and no previous knowledge or training was required to be a part of the team.

Over the course of the workshop, the team was educated on sustainability and how it related to MEDCOM mission readiness. They were also briefed on the current state of sustainability at Winn ACH and sustainability issues within the MEDCOM community that could be addressed at their facility. The Team developed a draft mission statement: "Maximizing quality healthcare while optimizing resources for future generations." Based on the information presented to them during the workshop, the team developed the Winn ACH Sustainability Action Plan, including short and long term sustainability goals for Winn ACH. The goals established by the Winn Sustainability Team include: '

- Reduction of solid waste output by 10% by the end of FY2011,
- Improved nutrition in Winn ACH dining facilities to support patient and staff health,
- Increased use of renewable energy at Winn ACH,
- Increased awareness and engagement with sustainability throughout the Winn ACH community, and
- Increased water conservation throughout the facility.

COL Paul Cordts, Winn ACH Commander during formation of the Winn Sustainability Team, emphasized to the team that sustainability was not just an environmental program but a program affecting all aspects of the healthcare operation. COL Cordts strongly advocated energy conservation at the MTF, and later championed efforts to install solar modules on the roof of the facility.

Data gathering to mark the progress of these goals has been ongoing since adoption of the original initiatives. Data is collected by the Winn ACH Sustainability Team.

Results

Within six months of establishment, the Winn ACH Sustainability Team had made significant progress towards achieving the goals outlined in their Sustainability Action Plan. The rate of solid waste recycling increased by an astounding 75.7% in FY 2010. A universal waste recycling program was established for the hospital. Through a partnership with the installation, solid waste and recycling is now regularly weighed at the on-post landfill. The Winn ACH Sustainability Team also supported participation in the National Drug Turn-In Day, advocating proper disposal of unused medications. The Team supported improved nutrition in the cafeteria through the purchase of fruits and vegetables from local vendors and by reducing the amount of soda being served from 15 regular types of soda in vending machines to 4 regular types of soda, 7 types of diet sodas, bottled juices, and diet teas. The Team also replaced the polystyrene clamshell containers from the dining facility with compostable corn-based containers. Furthermore, the Winn ACH Sustainability Team replaced all single-use adult pulse oximetry sensors with reusable sensors throughout the facility. The Team completed an elimination of all mercury containing devices from the hospital and also eliminated wet radiology film processing on-site.

To conserve water, Winn ACH is in the process of installing aerators in sinks, which will result in an estimated savings of \$5,000 per year. Additionally, all urinals will be replaced with low-flow urinals as needed. Winn ACH has also adopted a microfiber mop system to support green cleaning methods.

The installation of solar modules over the clinic roof began in May 2011 and was completed in November 2011, at a cost of \$2.4 million. It is estimated that the solar modules will save WACH 328,364 kilowatt hours (kWh) per year, which equates to a 2% annual energy reduction and a savings of \$29,553 per year. The solar module system includes a management dashboard that displays patterns of energy consumption at the hospital.

Winn ACH has installed motion sensor units in 80% of the light fixtures in the facility to support energy conservation. Occupancy sensors in the OR alone are estimated to save over \$9,000 per year. Winn ACH has installed a fully operational generator to produce electricity during peak hours and which allows Winn ACH to sell excess energy back to the grid at \$0.40 per kWh. Winn ACH currently purchases energy at \$0.08 per kWh. It is estimated that using the generator will reduce Winn ACH's energy consumption to 15% of the total installation's consumption during non-peak hour use. These energy reduction initiatives have helped Winn ACH go from consuming 40% of all Fort Stewart energy to now consuming 35% of the installation's total energy. Winn ACH is approaching energy initiatives in the bigger context of the energy master plan and estimate that they will be able to achieve 31% energy reduction by 2015, surpassing the 30% mandate set by EO 13514.

An evaluation of Winn ACH is scheduled for January 2012 to determine the cost savings of all the initiatives implemented thus far. The results of the evaluation will be put into a report that will be updated and distributed annually to the MEDCOM community.

Some obstacles did arise for the Winn Sustainability Team, however. Funding was not available for an initiative to recycle grease from the dining facility into bio-diesel fuel. An initiative to install wind turbines on the roof was deemed to be unfeasible. An initiative to reduce greenhouse gas emissions by using electric golf carts to transport patients within facility parking lots was halted because the golf carts were deemed unsafe for street use. The Winn ACH Sustainability Team dealt with these setbacks by developing new ideas or by modifying their plans to continue to integrate sustainability into Winn ACH. For example, solar modules were installed on the roof of the facility instead of wind turbines, and the city of Hinesville, Georgia and Fort Stewart provide regular bus service to Winn ACH.

Evaluation of the Winn ACH Sustainability program will continue, but the short-term impact on the community is already being felt. By providing more nutritious food in the cafeteria and eliminating polystyrene containers, the hospital has directly increased the health benefits for their patients and staff while reducing the amount of waste produced by the cafeteria. By diverting a significant portion of solid waste to recycling, the Sustainability Team has helped to safeguard our natural resources for future generations. Finally, by reducing the energy consumption of the facility, the Team has reduced total operating costs for Winn ACH, making it more sustainable and supporting mission readiness.

Conclusion

The Winn ACH Sustainability program will continue to save MTF resources into the future. The establishment of a holistic sustainability team at Winn ACH supports not only Winn ACH but also MEDCOM and America's military readiness. The process of sustainability team formation paired with metric-driven goal development is already being replicated at MTFs throughout MEDCOM and has proven highly successful. Winn ACH serves as a prime example of how a sustainable MEDCOM facility can not only improve the MTFs bottom line and support mission readiness but also how it can improve the health of staff, patients, and the surrounding community.